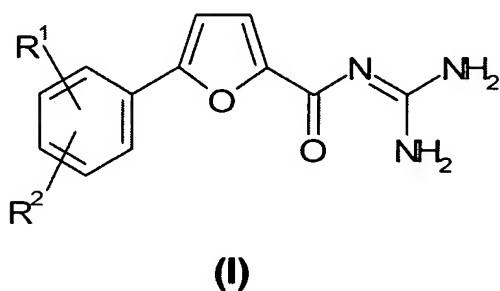


【CLAIMS】

【Claim 1】

A furancarbonylguanidine derivative represented by
the following Formula 1 and pharmaceutically acceptable
5 salts thereof.

【Formula 1】



(Wherein, R^1 and R^2 are each independently H, F, Cl,
10 Br, I, CF_3 , SO_2CH_3 , NO_2 , NH_2 , $C_1 \sim C_5$ straight or branched
alkyl, or OR^a . And, R^a is H, CF_3 , $C_1 \sim C_5$ straight or
branched alkyl, or phenyl.)

【Claim 2】

15 The furancarbonylguanidine derivative and
pharmaceutically acceptable salts thereof as set forth in
claim 1, wherein the compound of Formula 1 comprises:

- 1) [5-(2-fluorophenyl)furan-2-ylcarbonyl]guanidine,

- 2) [5-(3-fluorophenyl)furan-2-ylcarbonyl]guanidine,
3) [5-(4-fluorophenyl)furan-2-ylcarbonyl]guanidine,
4) [5-phenylfuran-2-ylcarbonyl]guanidine,
5) [5-(2-chlorophenyl)furan-2-ylcarbonyl]guanidine,
5 6) [5-(3-chlorophenyl)furan-2-ylcarbonyl]guanidine,
7) [5-(4-chlorophenyl)furan-2-ylcarbonyl]guanidine,
8) [5-(2-methylphenyl)furan-2-ylcarbonyl]guanidine,
9) [5-(3-methylphenyl)furan-2-ylcarbonyl]guanidine,
10) [5-(4-methylphenyl)furan-2-ylcarbonyl]guanidine,
10 11) [5-[2-(trifluoromethyl)phenyl]furan-2-
ylcarbonyl]guanidine,
12) [5-[3-(trifluoromethyl)phenyl]furan-2-
ylcarbonyl]guanidine,
13) [5-[4-(trifluoromethyl)phenyl]furan-2-
15 ylcabonyl]guanidine,
14) [5-(2-methoxyphenyl)furan-2-ylcarbonyl]guanidine,
15) [5-(3-methoxyphenyl)furan-2-ylcarbonyl]guanidine,
16) [5-(4-methoxyphenyl)furan-2-ylcarbonyl]guanidine,
17) [5-(2-nitrophenyl)furan-2-ylcarbonyl]guanidine,
20 18) [5-(3-nitrophenyl)furan-2-ylcarbonyl]guanidine,
19) [5-(4-nitrophenyl)furan-2-ylcarbonyl]guanidine,
20) [5-(2-aminophenyl)furan-2-ylcarbonyl]guanidine,
21) [5-(3-aminophenyl)furan-2-ylcarbonyl]guanidine,
22) [5-(4-aminophenyl)furan-2-ylcarbonyl]guanidine,
25 23) [5-(2-ethylphenyl)furan-2-ylcarbonyl]guanidine,

24) [5-(2-ethoxyphenyl)furan-2-ylcarbonyl]guanidine,
 25) [5-(2-isopropoxyphenyl)furan-2-ylcarbonyl]guanidine,
 26) [5-(2-phenoxyphenyl)furan-2-ylcarbonyl]guanidine,
 5 27) [5-(2,6-difluorophenyl)furan-2-ylcarbonyl]guanidine,
 28) [5-(3,5-difluorophenyl)furan-2-ylcarbonyl]guanidine,
 29) [5-(2,4-difluorophenyl)furan-2-ylcarbonyl]guanidine,
 10 30) [5-(2,5-difluorophenyl)furan-2-ylcarbonyl]guanidine,
 31) [5-(2,3-difluorophenyl)furan-2-ylcarbonyl]guanidine,
 15 32) [5-(2-chloro-6-fluorophenyl)furan-2-ylcarbonyl]guanidine,
 33) [5-(2-fluoro-5-methylphenyl)furan-2-ylcarbonyl]guanidine,
 34) [5-(2-methyl-5-fluorophenyl)furan-2-ylcarbonyl]guanidine,
 20 35) [5-(2-methoxy-5-fluorophenyl)furan-2-ylcarbonyl]guanidine,
 36) [5-(3,5-dichlorophenyl)furan-2-ylcarbonyl]guanidine,

37) [5-(2,3-dichlorophenyl) furan-2-
 ylcarbonyl]guanidine,
 38) [5-(2,5-dichlorophenyl) furan-2-
 ylcarbonyl]guanidine,
 5 39) [5-(2-methoxy-5-chlorophenyl) furan-2-
 ylcarbonyl]guanidine,
 40) [5-(2-chloro-5-trifluoromethylphenyl) furan-2-
 ylcarbonyl]guanidine,
 41) [5-(2,6-dimethylphenyl) furan-2-
 10 ylcarbonyl]guanidine,
 42) [5-(3,5-dimethylphenyl) furan-2-
 ylcarbonyl]guanidine,
 43) [5-(2,5-dimethylphenyl) furan-2-
 ylcarbonyl]guanidine,
 15 44) [5-(2,3-dimethylphenyl) furan-2-
 ylcarbonyl]guanidine,
 45) [5-(2,6-dimethoxyphenyl) furan-2-
 ylcarbonyl]guanidine,
 46) [5-(2,3-dimethoxyphenyl) furan-2-
 20 ylcarbonyl]guanidine,
 47) [5-(2,5-dimethoxyphenyl) furan-2-
 ylcarbonyl]guanidine,
 48) [5-(2-methoxy-5-bromophenyl) furan-2-
 ylcarbonyl]guanidine,

49) [5-(2-hydroxy-5-chlorophenyl)furan-2-ylcarbonyl]guanidine,

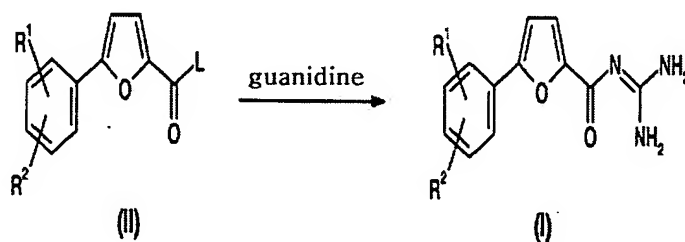
50) [5-(2-ethoxy-5-chlorophenyl)furan-2-ylcarbonyl]guanidine, and

5 51) [5-(2-isopropoxy-5-chlorophenyl)furan-2-ylcarbonyl]guanidine.

【Claim 3】

A preparation method for furancarboxylguanidine
10 compound of Formula 1, as shown in the below Scheme 1, in
which carboxylic acid derivative of compound II is reacted
with guanidine in the presence of base or with excess of
guanidine.

15 【Scheme 1】



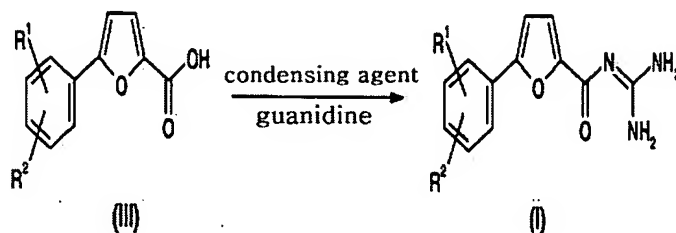
(Wherein, R¹ and R² are as defined in Formula 1, and
L is a leaving group that is easily left by guanidine.)

20 【Claim 4】

A preparation method for furancarbonylguanidine compound of Formula 1, as shown in the below Scheme 2, in which carboxylic acid of compound III is reacted with guanidine in the presence of a condensating agent.

5

【Scheme 2】



(Wherein, R¹ and R² are as defined in Formula 1.)

10 【Claim 5】

The preparation method as set forth in claim 4, wherein the condensating agent is selected from a group consisting of N,N-carbonyldiimidazole, dicyclohexylcarbodiimide (DCC), diisopropylcarbodiimide (DIPC), 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide (WSC) and diphenylphosphonylazide (DPPA).

15

【Claim 6】

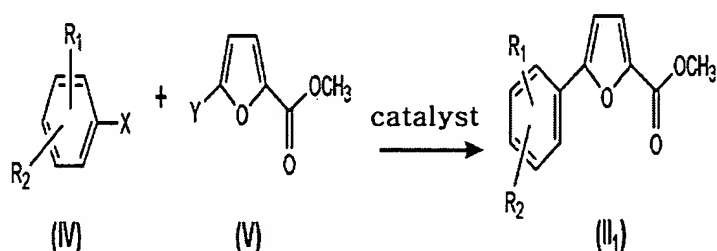
A preparation method for furan compound having a benzene ring at the 5th site, as shown in the below Scheme

20

3a, in which phenylboronic acid or stanylphenyl derivative compound IV and 5-halofuran compound V are reacted in the presence of a palladium catalyst, which is Stille-type coupling or Suzuki-type coupling, to give compound II₁.

5

【Scheme 3a】



(Wherein, R¹ and R² are as defined in Formula 1, in which X is B(OH)₂, BCl₂, BBr₂, SnBu₃, SnMe₃, or ZnCl, and Y is halogen (Br, I, Cl) or OSO₂CF₃.)

10

【Claim 7】

A pharmaceutical composition containing furancarbonylguanidine derivative and pharmaceutically acceptable salts thereof of claim 1 as an effective ingredient for the prevention and the treatment of ischemic heart disease.

15

【Claim 8】

The pharmaceutical composition as set forth in claim 7, wherein the ischemic heart disease is myocardial infarction, arrhythmia or angina pectoris.

5 **【Claim 9】**

A pharmaceutical composition containing furancarboxylguanidine derivative and pharmaceutically acceptable salts thereof of claim 1 as an effective ingredient for the protection of heart against
10 ischemic/reperfusion injury caused by reperfusion therapy.

【Claim 10】

The pharmaceutical composition as set forth in claim 9, wherein the reperfusion therapy is cardiac surgery such
15 as coronary artery bypass graft and percutaneous transluminal coronary angioplasty coronary artery bypass graft or medication including the use of thrombolytics.